

CLAIMS:

1. A method for starting an internal combustion engine with electromechanically actuated valves, the method
5 comprising:

processing a signal indicative of engine position;

after processing said signal, setting an intake stroke on a cylinder with sufficient piston downward
10 movement to produce an engine output; and

positioning valve timing based on said set intake stroke.

2. The method of Claim 1 wherein said cylinder is a
15 first available cylinder with sufficient piston downward movement to produce an engine output.

3. The method of Claim 1 wherein said engine output is a desired engine torque.

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4. The method of Claim 1 wherein said engine output is a desired cylinder air amount.

5. The method of Claim 1 wherein said engine output is
25 a desired engine speed.

6. A method for starting an internal combustion engine with electromechanically actuated valves, the method comprising:

5 processing a signal indicative of engine position;

setting a stroke of a cylinder during a start based on piston position and direction of piston travel; and

10 positioning valve timing of said cylinder based on said set stroke.

7. The method of Claim 6 wherein said setting a stroke of a cylinder is further based on engine speed.

15 8. The method of Claim 6 wherein said setting a stroke of a cylinder is further based on barometric pressure.

9. The method of Claim 6 wherein said stroke of a cylinder is an intake stroke.

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10. The method of Claim 6 wherein said stroke of a cylinder is an exhaust stroke.

25 11. The method of Claim 6 wherein said stroke of a cylinder is a compression stroke.

12. The method of Claim 6 wherein said stroke of a cylinder is a power stroke.

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13. A method for starting an internal combustion engine with electromechanically actuated valves, the method comprising:

5 processing a signal indicative of engine position;

after processing said signal setting an compression stroke on a cylinder with sufficient piston upward movement to produce an engine output; and

10 positioning valve timing based on said set compression stroke.

14. The method of Claim 13 wherein said cylinder is a first available cylinder with sufficient piston downward movement to produce an engine output.

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15. The method of Claim 13 wherein said engine output is a desired engine torque.

16. The method of Claim 13 wherein said engine output is 20 a desired cylinder air amount.

17. The method of Claim 13 wherein said engine output is a desired engine speed.

25 18. A method for starting an internal combustion engine with electromechanically actuated valves, the method comprising:

determining position of said engine;

30 determining a desired cylinder air amount based on at least an operating condition of said engine; and adjusting valve timing of a cylinder based on said engine position and said desired cylinder air amount.

19. The method of Claim 18 wherein said at least an operating condition of said engine is a temperature of said engine.

5 20. The method of Claim 18 wherein said at least an operating condition of said engine is a temperature of ambient air.

10 21. The method of Claim 18 wherein said at least an operating condition of said engine is a desired engine torque amount.

22. The method of Claim 18 said adjusting valve timing includes setting the stroke of said cylinder.

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23. A computer readable storage medium having stored data representing instructions executable by a computer to control an internal combustion engine of a vehicle, said storage medium comprising:

20 instructions for processing a signal indicative of engine position;

 instructions for setting an intake stroke on a cylinder with sufficient piston downward movement to produce an engine output after processing said signal;

25 instructions for positioning valve timing based on said set intake stroke; and

 instructions for performing a first combustion event in said cylinder with said set intake stroke.